

AMENDMENTS TO THE ABSTRACT OF THE DISCLOSURE

(Underlinings indicate insertions; brackets indicate deletions)

--**ABSTRACT** [OF THE DISCLOSURE]

LOW OFFSET AND LOW GLITCH ENERGY CHARGE PUMP  
FOR PLL-BASED TIMING RECOVERY SYSTEMS

A high precision charge pump used in a phase-lock-loop incorporating a phase/frequency detector is designed and constructed to substantially eliminate the effects of DC offset and glitch errors on the charge pump output current. The high precision charge pump is constructed of parallel current paths each having a central node which is, in turn, connected to a feedback element. The feedback element defines a feedback current which is applied to the charge pump so as to maintain the two central [common drain] nodes at an equi-potential level and to maintain the value of the pump-down current exactly equal to the value of the pump-up current output by the device.--

The Abstract of the Disclosure is replaced by the following new Abstract:

LOW OFFSET AND LOW GLITCH ENERGY CHARGE PUMP  
FOR PLL-BASED TIMING RECOVERY SYSTEMS

**ABSTRACT**

A high precision charge pump used in a phase-lock-loop incorporating a phase/frequency detector is designed and constructed to substantially eliminate the effects of DC offset and glitch errors on the charge pump output current. The high precision charge pump is constructed of parallel current paths each having a central node which is, in turn, connected to a feedback element. The feedback element defines a feedback current which is applied to the charge pump so as to maintain the two central nodes at an equi-potential level and to maintain the value of the pump-down current exactly equal to the value of the pump-up current output by the device.